



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,245	07/04/2003	Wen-Huang Liu	KYCP0010USA	1244
27765	7590	01/05/2005	EXAMINER	
(NAIPC) NORTH AMERICA INTERNATIONAL PATENT OFFICE			HU, SHOUXIANG	
P.O. BOX 506			ART UNIT	PAPER NUMBER
MERRIFIELD, VA 22116			2811	

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/604,245

Applicant(s)

LIU ET AL.

Examiner

Shouxiang Hu

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1-22,26,28 and 31-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-25,27,29,30 and 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 1-22, 26, 28 and 31-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 20040419.

Accordingly, claims 1-44 are pending in this application; and claims 23-25, 27, 29-30 and 44 remain active in this office action.

### *Claim Objections*

2. Claims 23-25, 27, 29-30 and 44 are objected to because of the following informalities and/or defects:

Claims 23 and 44 each recites the term of "at least one reaction layer", but fail to clarify its relationship with the first and second reactive layers also recited in the claims.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23-25, 27, 29-30 and 44, as being best understood in view of the claim objections set forth above, are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. ("Inoue"; US 6,597,019) in view of Hahn et al. ("Hahn"; US 2003/0168664).

Inoue discloses a light emitting diode (Fig. 3) having an adhesive layer and a reflective layer, comprising at least: a substrate (at least the lower portion of 13a); a reflective layer (at least the upper portion of 13a) formed over the substrate; a transparent adhesive layer (16) formed over the reflective layer; a Ni layer (5) formed over the transparent adhesive layer, wherein the Ni layer (5) is naturally readable as a second reaction layer as it is naturally capable of enhancing the adhesion by forming a similar bonding reaction with a resin as in the instant case, since it is formed of Ni that is chemically and/or physically substantially similar to Cr as that used in the instant invention; and an LED stack formed over the second reaction layer (5).

Although Inoue does not expressly disclose that the reflective layer can be formed of Ag covered with a Cr layer, one of ordinary skill in the art would readily that Ag is an art-known reflective material for high reflectivity, and that it is commonly desirable to cover it with a barrier layer such as Cr for protecting the Ag reflective layer, as evidenced in Hahn (see the Ag reflective layer 16 covered by the Cr layer 15 in Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Ag reflective layer and the Cr cover layer of Hahn into the light emitting device of Inoue, so that a light-emitting device with a

good reflective layer with high reflectivity and good protection to it would be obtained.

And, in such a collectively taught device, the Ag layer and the Cr layer would be naturally readable as a reflective layer and a first reaction layer.

Regarding claim 24, at least the top portion of the Ni layer (5) of Inoue is readable as a transparent conductive layer, as the whole Ni layer (5) therein is very thin and substantially transparent.

Regarding claim 29, the transparent adhesive layer of Inoue is formed of a resin, which normally naturally comprises a polyimide.

### ***Response to Arguments***

5. Applicant's arguments filed on October 28, 2004, have been fully considered but they are not persuasive, as explained below.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,

Inoue discloses the claimed invention except that Inoue does not expressly disclose that a Cr/Ag layered mirror surface can be formed in the base layer on which the LED is glued. Hahn is cited to show that such a layered mirror surface is common in

the art, as one of ordinary skill in the art would readily recognize that Cr layer is a commonly known adhesion-promotion and stable protection layer for Ag. In addition, the examiner herein further provides the prior art reference of US 6,416,194 issued to Demiryont (see the Cr layers 20 and 22 and the Ag layer 18 in Fig. 1; also see col. 9, lines 14-17), in response to applicant's arguments for showing further evidence regarding such understanding in the ordinary skill.

It would be therefore well within the ordinary skill in the art to incorporate a Cr/Ag mirror surface such as the one of Hahn into the LED device of Inoue, in order to formed a well protected and stable reflective surface in the base layer with which the LED is glued thereon later.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference A is cited as being related to Cr/Ag mirror surface structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2811

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH

December 29, 2004



**SHOUXIANG HU**  
**PRIMARY EXAMINER**